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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/977,567	10/15/2001	Toshikazu Hirota	791 167	2012
25191	7590	05/20/2004	EXAMINER	
BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			GORDON, BRIAN R	
			ART UNIT	PAPER NUMBER
			1743	
DATE MAILED: 05/20/2004				

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/977,567

Applicant(s)

HIROTA ET AL.

Examiner

Brian R. Gordon

Art Unit

1743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10-15-01.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 5-6-02.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

## **DETAILED ACTION**

### ***Priority***

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Specification***

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

3. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract contains claim language such as "comprising".

### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

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5. Claims 1-22 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

6. Claims 1, 2, 17, 18, and 22 state or similarly imply "wherein a shape of a cross section perpendicular to the direction of an axis of **the through hole in the nozzle portion has more than three projections radially protruded from the center of the through hole, thus exhibiting either a polygon having acute and obtuse interior angles or a crown shape formed by connecting the projections to each other.**

The center hole is actually hollow therefore the projections **do not** actually begin or protrude from the center of the through hole. As seen applicants figure 3A the projections actually extend or protrude from a point located at a distance of L4 from the center of the through hole and the projections are a length of L3.

It is not clear how interior angles are formed or what is considered interior angles. The interior angles of the shape of the through holes are angles that face inwardly toward the center of the through hole. While the "crown" shape or nozzle shapes of 3A, 3B, and 4 contain acute interior angles, there is no shape shown where there exists both acute and obtuse interior angles. There is no working example or figure shown where a nozzle shape exists that is formed by both acute and obtuse angles.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 1, 2, 5-6, 8, 10, 14-18, and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what applicant intends to claim as the invention, for the independent claims do not contain transitional phrases to determine where the preamble ends and the actual components of the invention are being claimed. Applicant should clearly recite what elements are included in the device.

In claim 5 one of words "end" should be deleted.

9. Claim 6 recites the limitation "the major surface" in line 4. There is insufficient antecedent basis for this limitation in the claim.

In claim 6 it appears as if the last line should read "the sample inlet opening".

10. Claim 8 recites the limitation "the surface in the vicinity of the sample discharging opening" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim.

11. Claim 8 recites the limitation "the portion where the cavity is disposed" in line 2. There is insufficient antecedent basis for this limitation in the claim.

12. Claim 8 recites the limitation "the portion where the piezoelectric/electrostrictive element is disposed" in lines 3-4. There is insufficient antecedent basis for this limitation in the claim.

13. Claim 10 recites the limitation "the portion where the sample ejection port is formed" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

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14. As to claim 13, it is unclear what is "a plurality of pipette elements" and "a second element". Any element that makes up the pipette may be broadly interpreted as a pipette element.

15. Claims 14-15 appear to be product by process claims. The claims are directed to how the device is formed. The claims do not add any additional structure or further limit the established components of the structure.

16. Claim 16 recites the limitation "said one cavity" in lines 2-3. There is insufficient antecedent basis for this limitation in the claim.

It is unclear if the said one cavity is the same as the "a cavity" recited in claim one. If so then the term "one" should be deleted.

17. Claim 22 is rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. There are no steps recited in the claim. The claim appears to be directed to a plurality of devices, but there are no steps directed to using the devices to perform any method.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Zengerle, Roland et al. ; Hirota, Toshikazu et al.; Sander, Dietmar; Wiktor, Peter; Fisher, William D.; Hubbard, Allyn et al.; Horine, David A. et al.; Noolandi, Jaan et al.; Caren, Michael P. et al.; Hirota, Toshikazu et al. ; Tisone, Thomas C.; Williams, Roger O. et al.; Hadimioglu, Babur B. et al.; Barth, Phillip W. et al.; Sasaki, Glenn C. Wiktor, Peter; McBride, Sterling Eduard et al.; Ecker, David J. et al.; Miyazaki,

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Takeshi et al. ; Hess, Joseph et al. ; Takeuchi, Yukihiisa et al. ; Ohnishi, Takao et al. ; Hirota, Toshikazu et al. ; Agarwal, Arun K. et al.; and Lott, W. Gerald disclose fluid dispensing devices.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is 571-272-1258. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 571-272-1267. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

brg

  
Jill Warden  
Supervisory Patent Examiner  
Technology Center 1700